

Claims

[c1] What is claimed is:

1.A back light unit with high heat transfer rate disposed under a display panel, the back light unit comprising:
a light source generator for providing a light source;
a diffusing plate interposed between the light source generator and the display panel for scattering the light source generated from the light source generator to the display panel; and
a reflecting sheet disposed under the light source generator for reflecting the light source upward to the diffusing plate, the reflecting sheet comprising at least one opening for improving a heat transfer rate of the back light unit.

[c2] 2.The back light unit of the claim 1 wherein the opening is disposed directly under the light source generator.

[c3] 3.The back light unit of the claim 1 wherein the opening on the reflecting sheet is a slot, a shape of the slot corresponding to a shape of the light source generator.

[c4] 4.The back light unit of the claim 1 wherein the light source generator comprises at least one light tube.

- [c5] 5.The back light unit of the claim 4 wherein a width of the opening is less than half of a width of the light tube.
- [c6] 6.The back light unit of the claim 4 wherein the light source generator comprises a plurality of light tubes arranged in parallel.
- [c7] 7.The back light unit of the claim 1 wherein the reflecting sheet comprises at least one uneven structure for increasing the reflection rate and heat transfer area of the reflecting sheet.
- [c8] 8.The back light unit of the claim 1 wherein the reflecting sheet comprises at least one V-shaped structure to increase the reflection rate and heat transfer area of the reflecting sheet.
- [c9] 9.The back light unit of the claim 1 wherein the back light unit further comprises a housing disposed under the reflecting sheet and surrounding the reflecting sheet.
- [c10] 10.The back light unit of the claim 1 wherein the housing comprises at least one uneven structure for increasing the heat transfer area of the back light unit.
- [c11] 11.The back light unit of the claim 9 wherein the housing comprises a plurality of heat dissipating holes.

- [c12] 12. A back light unit with high heat transfer rate disposed under a display panel, the back light unit comprising:
a light source generator for providing a light source;
a diffusing plate disposed between the light source generator and the display panel for scattering the light source generated from the light source generator to the display panel; and
a reflecting sheet disposed under the light source generator to reflect the light source upward to the diffusing plate;
wherein the reflecting sheet comprises at least one uneven structure and a plurality of openings to increase heat dissipating efficiency of the reflecting sheet.
- [c13] 13. The back light unit of the claim 12 wherein the openings on the reflecting sheet are disposed in the bottom of the uneven structure.
- [c14] 14. The back light unit of the claim 12 wherein the openings on the reflecting sheet are disposed in the top of the uneven structure.
- [c15] 15. The back light unit of the claim 12 wherein the uneven structure is a V-shaped structure.
- [c16] 16. The back light unit of the claim 12 wherein the back light unit further comprises a housing disposed under

the reflecting sheet and surrounding the reflecting sheet.

- [c17] 17.The back light unit of the claim 16 wherein the housing comprises at least one uneven structure to increase the heat transfer area.
- [c18] 18.The back light unit of the claim 16 wherein the housing comprises at least one heat dissipating hole for increasing the heat transfer rate of the back light unit.
- [c19] 19.The back light unit of the claim 12 wherein the light source generator comprises at least one light tube.
- [c20] 20.The back light unit of the claim 12 wherein the light source generator comprises a plurality of light tubes arranged in parallel.